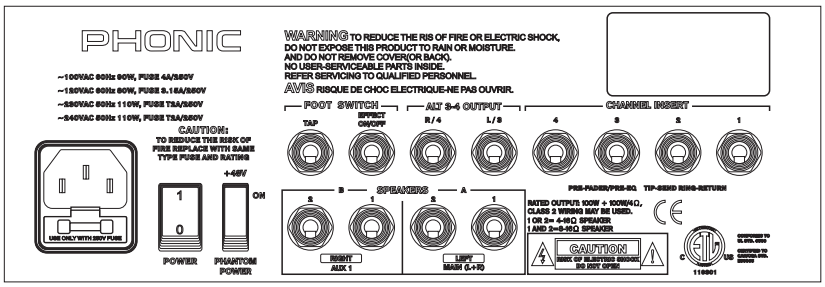
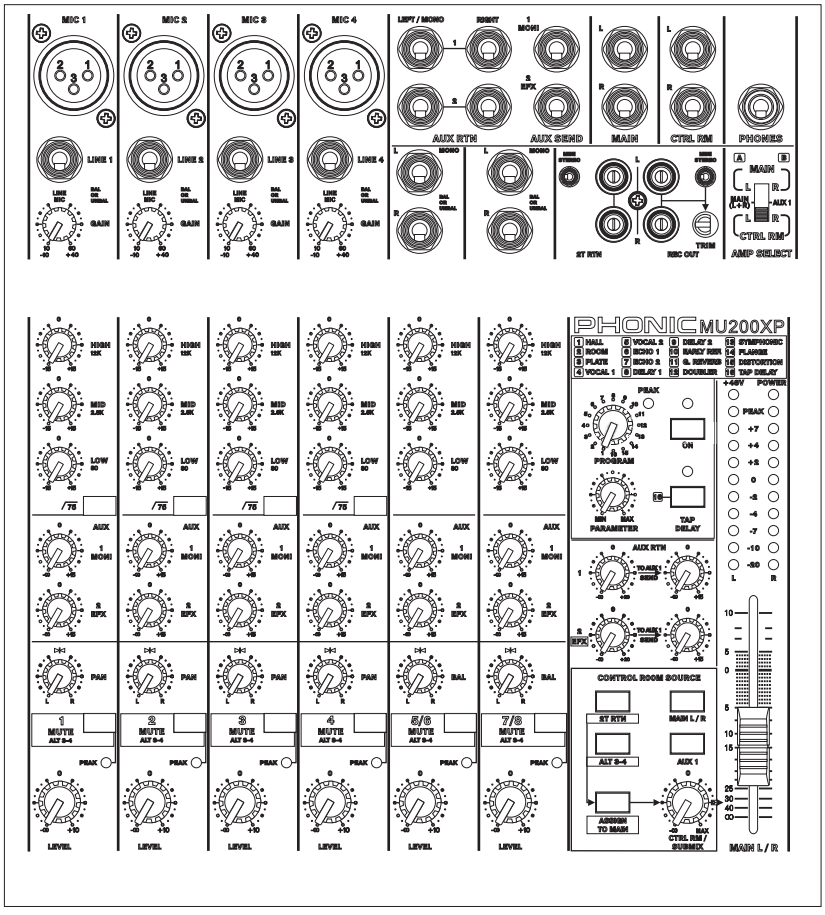
PHONIC

MU 200XP

Compact Powered Mixer





ENGLISH

User's Manual

IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions before operating this apparatus.
2. Keep these instructions for future reference.
3. Heed all warnings to ensure safe operation.
4. Follow all instructions provided in this document.
5. Do not use this apparatus near water or in locations where condensation may occur.
6. Clean only with dry cloth. Do not use aerosol or liquid cleaners. Unplug this apparatus before cleaning.
7. Do not block any of the ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plug, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13. Unplug this apparatus during lighting storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK)
NO USER SERVICEABLE PARTS INSIDE
REFER SERVICING TO QUALIFIED PERSONNEL

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

CAUTION: Use of controls or adjustments or performance of procedures other than those specified may result in hazardous radiation exposure.

PHONIC

MU200XP

Compact Powered Mixer

USER'S MANUAL

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Phonic reserves the right to improve or alter any information suppied within this document without prior notice.

V1.1 DEC 17, 2004

INTRODUCTION

Thank you for choosing one of Phonic's many quality compact mixers. The MU 200XP Compact Powered Mixer – designed by the ingenious engineers that have created a variety of mixers fantastic in style and performance in the past – display similar proficiency that previous Phonic products have shown; with more than a few refinements, of course. The entire MU series features full gain ranges, amazingly low distortion levels, and incredibly wide dynamic ranges, just showing the dominance these small machines will have in the mixing World.

We know how eager you are to get started – wanting to get the mixer out and hook it all up is probably your number one priority right now – but before you do, we strongly urge you to take a look through this manual. Inside, you will find important facts and figures on the set up, use and applications of your brand new mixer. If you do happen to be one of the many people who flatly refuse to read user manuals, then we just urge you to at least glance at the Instant Setup section. After glancing at or reading through the manual (we applaud you if you do read the entire manual), please store it in a place that is easy for you to find, because chances are there's something you missed the first time around.

FEATURES

- Audiophile-Quality & ultra low noise
- Built-in 100 + 100 Watt stereo power amplifier for Main L/R, Main(L+R)/Aux 1 or CTRL RM L/R
- Extra ALT 3-4 stereo bus
- 4 mono mic/line channels
- 2 stereo channels and 2 stereo aux returns
- 2 Aux sends per channel
- 75Hz low-cut filter on mono channel
- 3-band EQ on each channel
- Inserts on mic channels
- +48V phantom power
- 24-bit digital stereo multi-effect processor with 16 programs plus one main parameter control, tap control and foot switches
- Control room/Phones source matrix
- Stereo aux send 1 cue for monitoring individual channel
- Master aux return section with EFX to Monitor
- Handy mini-stereo and RCA-type inputs and outputs, record output with independent trim control for recording level matching
- High-volume headphone output
- 4 1/4" phone jacks for speaker connection
- Optional rack-mounting kit, model name ER-MU 200XP

GETTING STARTED

1. Ensure all power is turned off on your mixer. To totally ensure this, the AC cable should not be connected to the unit.
2. All faders and level controls should be set at the lowest level and all channels muted to ensure no sound is inadvertently sent through the outputs when the device is switched on. All levels can be altered to acceptable degrees after the device is turned on using the channel setup instructions.
3. Plug any necessary equipment into the device's various outputs. This could include amplifiers and speakers, monitors, signal processors, and/or recording devices.
4. Plug the supplied AC cable into the AC inlet on the back of the device and then into a power outlet of a suitable voltage.
5. Turn the power switch on and follow the channel setup instructions to get the most out of your equipment.

CHANNEL SETUP

1. To ensure the correct audio level of the input channel is selected, each of the level input controls of the Mixer should be turned counterclockwise or down as far as they will go.
2. No input other than the one being set should have any device plugged in. This will ensure the purest signal is used when setting channels.
3. Set the level and AUX 1 controls of the channel you are setting to the 0 dB mark. Also set the Main L-R fader to the 0 dB mark.
4. Press down the AUX 1 button on the control room source section, allowing the level meter to display the level of the channel being set.
5. Ensure the channel has a signal sent to it similar to the signal that will be sent when in common use. For example, if the channel is using a microphone, then you should speak or sing at the same level the performer normally would during a performance; if a guitar is plugged into the channel, then the guitar should also be strummed as it normally would be (and so on). This ensures levels are completely accurate and avoids having to reset them later.
6. Set the gain so the Level Meter indicates the audio level is around 0 dB.
7. This channel is now ready to be used; you can stop making the audio signal.
8. You can repeat the same process for other channels. Or not, it's your call.

MAKING CONNECTIONS

Inputs and Outputs

1. XLR Microphone Jacks

These jacks accept typical 3-pin XLR inputs for balanced and unbalanced signals. They can be used in conjunction with microphones – such as professional condenser, dynamic or ribbon microphones - with standard XLR male connectors, and feature low noise preamplifiers, serving for crystal clear sound replication. The MU 200XP features four standard XLR microphone inputs for your convenience.

NB. When these inputs are used with condenser microphones, the Phantom Power should be activated. However, when Phantom Power button is engaged, single ended (unbalanced) microphones and instruments should not be used on the Mic inputs.

2. Line Inputs

This input accepts typical 1/4” TRS or TS inputs, for balanced or unbalanced signals. There are various numbers of these inputs depending which mixer you are using. They can be used in conjunction with various line level devices, such as keyboards, drum machines, electric guitars, and a variety of other electric instruments.

3. Stereo Channels

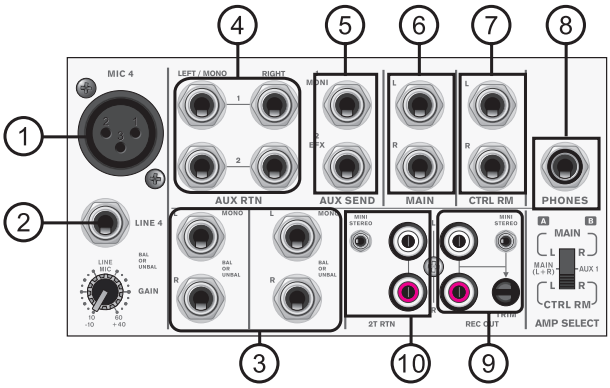
The MU 200XP mixer features a couple of stereo channels, thrown in for maximum flexibility. Each of these stereo channels features two 1/4” TRS phone jacks, for the addition of various line level input devices, such as electronic keyboards, guitars and external signal processors or mixers. These Stereo Channels can also be used as Mono channels, where the signal from any 1/4" phone jack plugged into the Left stereo input will cause the signal to be duplicated to the Right input due to the miracle of jack normalizing. This does not work in reverse, however.

4. Stereo AUX Return

These 1/4” TS inputs are for the return of audio to the MU 200XP mixer, processed by an external signal processor. If really needed, they can also be used as additional stereo inputs, with a level control located on the face of the mixer. The signal received by AUX Return 2 is routed to the internal effects processor. Furthermore, the Stereo AUX Return can also accept Mono signals, where plugging the 1/4" phone jack of any device into the Left input will cause the signal to be duplicated to the Right input also. This does not work in reverse, however.

5. AUX / Effects Send

These 1/4” TS outputs may be used to connect to an external digital effect processor, or even to an amplifier and speakers (depending on your desired settings), to the mixer.



6. Main L and R Outputs

These two ports will output the final stereo unbalanced line level signal sent from the main mixing bus. The primary purpose of these jacks is to send the main output to external devices, which may include power amplifiers (and in-turn, a pair of speakers), other mixers, as well as a wide range of other possible signal processors (Equalizers, Crossovers, etcetera).

NB. When sending unbalanced signals from this output, a 1/4" TRS stereo plugs must be used and have the ring-pin disconnected, as to avoid damaging this mixer.

7. Control Room Outputs

These two 1/4” Phone Jack outputs feed the signal altered by the CTRL RM / SUBMIX level control on the face of the mixer. This output has extensive use, as it can be used to feed the signal from the mixer to an active monitor, for the monitoring of the audio signal from within a booth, among other possible uses.

8. Phones

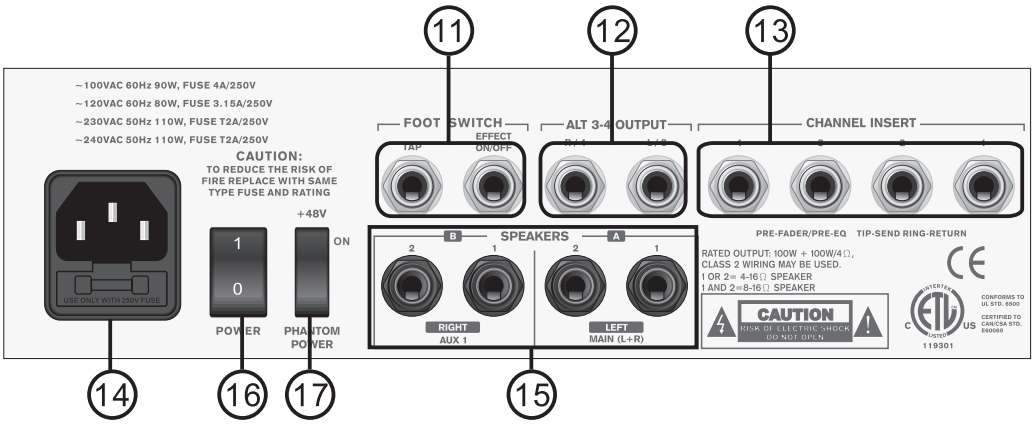
This stereo output port is suited for use with headphones, allowing monitoring of the mix. The audio level of this output is controlled using the CTRL RM / SUBMIX level control.

9. Record Out

These outputs will accommodate RCA cables, able to be fed to a variety of recording devices. Also included is a mini stereo jack for the addition of recording devices such as MD players, and even laptop computers, as well as a Trim control, allowing users to control the output signal level, ensuring total control over recording quality.

10. 2T Return

These RCA and mini stereo inputs are used to connect the mixer with external devices, such as tape and CD players, or even Laptop computers, receiving a signal from another source and feeding it to the Main L-R mixing bus.



Rear Panel

11. Foot Switch Jacks

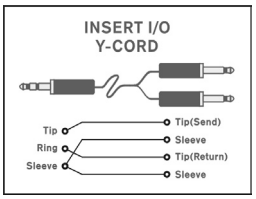
These ports are for the inclusion of a foot switch, used to remotely adjust properties of the built-in Digital Effect processor, to the mixer. The left jack is used to adjust the tap delay properties, where the right jack is used for turning the effects on and off.

12. ALT 3-4 Output

The unbalanced signal sent from these outputs is fed from the ALT 3-4 mixing bus, and can be used in conjunction with a large array of devices, including signal processors, other PA systems, recording devices, and so on.

13. Channel Inserts

Located on the rear of the MU 200XP, the primary use for these TRS phone jacks is for the addition of external devices, such as dynamic processors or equalizers, to all mono input channels. This will require a Y cord that can send (pre-fader and pre-EQ) and receive signals to and from an external processor.



14. Power Connector and Fuse Holder

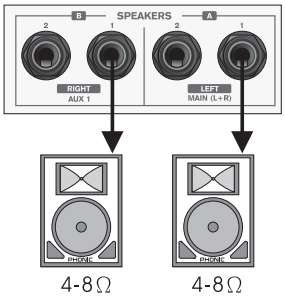
This port is for the addition of a power cable, allowing AC power to be supplied to the mixer. Please use the power cable that is included with this mixer only. The Fuse holder, located above the AC Power connector, is, of course, for the MU 200XP's fuse. If the fuse happens to blow, open the holder cover, and replace the fuse with a suitable replacement (as indicated about the power connector).

15. Speaker Outputs

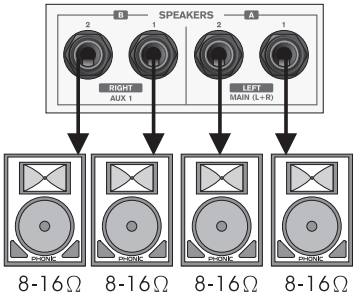
These 1/4" phone jacks are used to connect to speakers, fed from internal power amplifiers A and B. To use these, simply insert an appropriate 1/4" TS plug into them. Speakers with a minimum load of 4 ohms each should be used. The output of these jacks can be altered by using the Amp Select switch on the front of the unit.

NB. Only use passive speakers in conjunction with the Speaker outputs, as to avoid damaging any equipment.

One Speaker per Channel: When connecting a single speaker to each channel's output, speakers with impedances between 4 and 8 ohms should be used.



Two Speakers per Channel: When connecting two speakers to the Speaker Outputs, the loading of each speaker should be between 8 and 16 ohms (as two 8 ohm speakers will form a total loading of 4 ohms, two 16 ohm speakers a total loading of 8 ohms, etc).



CONTROLS AND SETTINGS

Rear Panel

16. Power Switch

This switch is used to turn the mixer on and off. Ensure you turn all level controls down before activating.

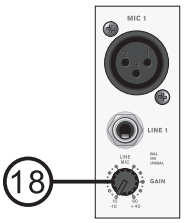
17. Phantom Power Switch

When this switch is in the on position, it activates +48V of phantom power for all microphone inputs, allowing condenser microphones (well, the ones that don't use batteries) to be used on these channels. Activating Phantom Power will be accompanied by an illuminated LED above the left channel Level Meter. Before turning Phantom Power on, turn all level controls to a minimum to avoid the possibility of a ghastly popping sound from the speakers.

NB. Phantom Power should be used in conjunction with balanced microphones. When Phantom Power is engaged, single ended (unbalanced) microphones and instruments should not be used on the Mic inputs. Phantom Power will not cause damage to most dynamic microphones, however if unsure, the microphone's user manual should be consulted.

Channel Controls

18. Line / Mic Gain Control



This controls the sensitivity of the input signal of the Line/Microphone input. The gain should be adjusted to a level that allows the maximum use of the audio, while still maintaining the quality of the feed. This can be accomplished by adjusting it to a level that will allow the peak indicator occasionally illuminate. All 4 mono channels feature this control.

19. High Frequency Control

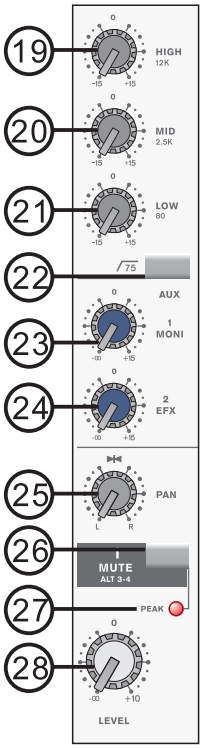
This control is used to give a shelving boost or cut of ±15 dB to high frequency (12 kHz) sounds. This will adjust the amount of treble included in the audio of the channel, adding strength and crispness to sounds such as guitars, cymbals, and synthesizers.

20. Middle Frequency Control

This control is used to provide a peaking style of boost and cut to the level of middle frequency (2.5 kHz) sounds at a range of ±15 dB. Changing middle frequencies of an audio feed can be rather difficult when used in a professional audio mix, as it is usually more desirable to cut middle frequency sounds rather than boost them, thereby soothing overly harsh vocal and instrument sounds in the audio.

21. Low Frequency Control

This control is used to give a shelving boost or cut of ±15 dB to low frequency (80 Hz) sounds. This will adjust the amount of bass included in the audio of the channel, and bring more warmth and punch to drums and bass guitars.



22. Low Cut Filter (75 Hz)

This button, featured on channels 1 through to 4, will activate a low-cut / high-pass filter that reduces all frequencies below 75 Hz at 18 dB per Octave, helping to remove any unwanted ground noise or stage rumble.

23. AUX 1 (Monitor) Control

This control allows the user to send the corresponding signal to the AUX 1 output, which can be used in conjunction with an amplifier and studio or stage monitors, or simply as an auxiliary output for any means required. The control is pre-fader, therefore any changes made to the corresponding channel level control (28) do not affect the AUX 1 send signal.

24. AUX 2 (Effects) Control

This control alters the signal level that is sent to the AUX 2 (or EFX) send output, which can be used in conjunction with external signal processors (this signal of which can be returned to mixer via the AUX return input, or any stereo input channel), or simply as an auxiliary output for any means required. This control is post-fader, therefore any changes made to the corresponding channel level control (28) are also applied to the EFX signal.

25. Pan / Balance Controls

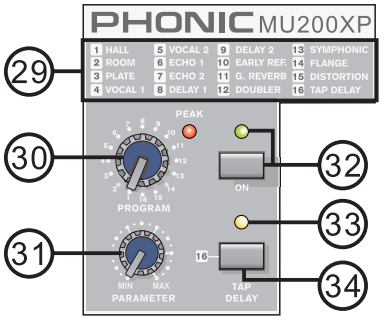
This alternates the degree or level of audio that the left and right side of the main mix should receive. On mono channels, this control will adjust the level that the left and right should receive (pan), where as on a stereo channel, adjusting the BAL control will attenuate the left or right audio signals accordingly (balance).

26. Mute / ALT 3-4
This handy little button is basically a typical mute button – effectively stopping any signal received by the channel from being sent to the Main L/R and EFX mixing buses – however it does so much more. Pushing this button routes the channel's signal away from the Main L/R and to its own "Alternative" stereo output, where the signal can be used at will. If you wish to use it to connect an amplifier and speakers, or simply patch it through to an unused input channel, you can easily do so. This does not affect the AUX 1 send.

27. Peak Indicator
This LED indicator will illuminate when the device hits high peaks, 6 dB before overload occurs. It is best to adjust the gain of the channel so that the PEAK indicator lights up on intervals only. This will ensure a greater dynamic range of audio.

28. Level Control
This rotary control will alter the signal level that is sent from the corresponding channel to the main mixing bus.

Digital Effect Section



29. Digital Effect Display
This panel displays the titles of different effects that can be added to your audio signal. When you select the effect number with the Program Control, the corresponding effect is applied automatically. For a list of available effects, please observe the Digital Effect Table.

30. Program Control
This control is used to scroll through the various effects shown on the Digital Effect Display. Turning the control will automatically change the effect and apply it to the EFX RTN 2 feed.

31. Parameter Control
This will adjust the appropriate one main parameter of the digital effect that is applied to the audio feed. Please refer to the digital effects table for more information on effect parameters.

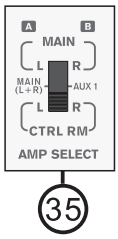
32. DSP Effect On and Indicator
This button is pushed to turn the corresponding effect panel on or off. When the effect processor is turned on, the corresponding LED illuminates.

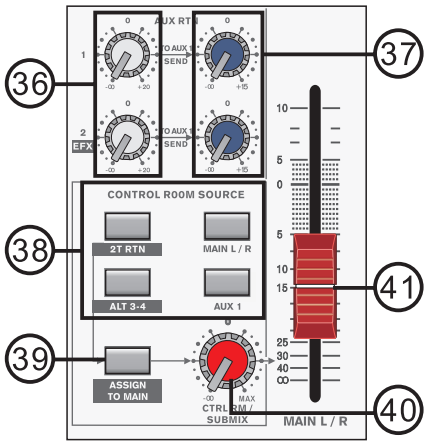
33. Peak Indicator
This LED indicator will illuminate when the DSP is overdriven and causes distortion. It is best to adjust the appropriate AUX 2 / EFX Send control (on the channel strip) so as to ensure the PEAK indicator does not light. This will ensure a greater dynamic range for audio.

34. Tap Delay and Indicator
When the tap delay effect is selected, this button is used to determine the delay time. By pushing the button several times, the mixer interprets the time between last two pushes and remembers this as the delay time, until the button is pushed again (this is kept, even after the power is turned off). When the tap delay effect is selected, the corresponding LED will flash at the intervals selected.

Master Section

35. Amp Select Switch
By using this switch, users can utilize the MU 200XP's power amplifier to their needs. Most commonly, this switch should be set to the "MAIN ST" L / R position (uppermost position), however you may wish to amplify the Control Room signal, in which case you should set the switch to CTRL RM L / R position (lower position). However, a more appealing option may be to combine the Main Left and Right signal and amplify that with power amp A, then use the other to amplify the AUX 1 signal, in which case you should set the switch to the MAIN (L+R) / AUX 1 position (middle position).





36. AUX Stereo Return Controls
These controls adjust the signal level of audio fed through to the AUX Stereo Return inputs, which will be added to the MAIN L-R mix. The AUX Return 2 control also acts as the built-in DSP Effect level control, when no device is plugged into the AUX 2 Return jacks.

37. AUX Stereo Return "to AUX 1" Send Controls
These two rotary controls are used to adjust the audio signal received by the AUX Return 1 and 2 jacks, which is sent to the AUX 1 Send output. These act as an "effect to Monitor" control, allowing performers/engineers to hear the signal processed by either external devices or the Internal DSP Effect Engine.

38. Control Room Source Buttons
Engaging any of these four buttons will enable you to use the signal from any of the corresponding sources to send to the Control Room mixing bus and the LED Level Meter for level monitoring. For instance, pressing 2T Rtn button will allow you to send the 2 Track Return signal to the Control Room Outputs and Level Meter, where as the Main L-R will allow you to use the Main Left/Right signal instead, the AUX 1 stereo mixing bus allows you to use the AUX 1 signal and the ALT 3-4 allows you to use the addition stereo mix bus signal. You can even use a combination of all these signals, if need be.

Channel Tracking: by pressing the AUX 1 button in the Control Room Source section, and leaving all other buttons released, users can affectively track the mono or stereo signals from input channels. SImply ensure all AUX 1 level controls are to a minimum, and that the Assign To Main button is released, and you can turn the AUX 1 up control of any input channel to track it's signal.

39. Assign To Main Button
When the "Assign To Main" button is engaged, the 2T Return and Alternative 3-4 signals can be selected by using the corresponding buttons, and are, intern, sent to the Main L-R and Control Room mixing buses via the Control Room / Submix control. This can come in handy when you want play a CD during intermission in a live show. If you have the Main L-R or AUX 1 buttons on the Control Room Source section engaged, the corresponding signals will not be sent to the Main L-R by way of this button, nor will their signals be sent to the Control Room or Phones outputs.

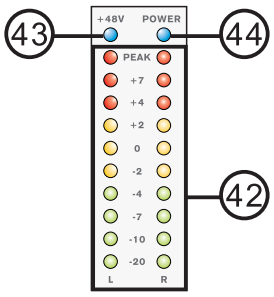
40. Ctrl Rm / Submix Control
This control is used to adjust the audio level of the Control Room feed, which is sent to both the Control Room outputs (for monitoring, acting as side fill or other purposes) and Phones outputs (to be used in conjunction with headphones for monitoring purposes). It also acts as the "submix" control, which allows the user to adjust the signal selected by the Control Room Source when the Assign to Main button is engaged.

41. Main L-R Control
This 60mm fader is final level control for the main left and right audio feed, sent to the Main L and R output.

42. Level Meter
The MU 200XP's stereo 10-segment level meters give an accurate indication of when audio levels from the Control Room Matrix Source reach certain levels. It is suggested for the maximum use of audio to set the various levels controls so that the Peak LEDs flash only occasionally (and perhaps it is better if you ensure the level stays around a pinch below that).

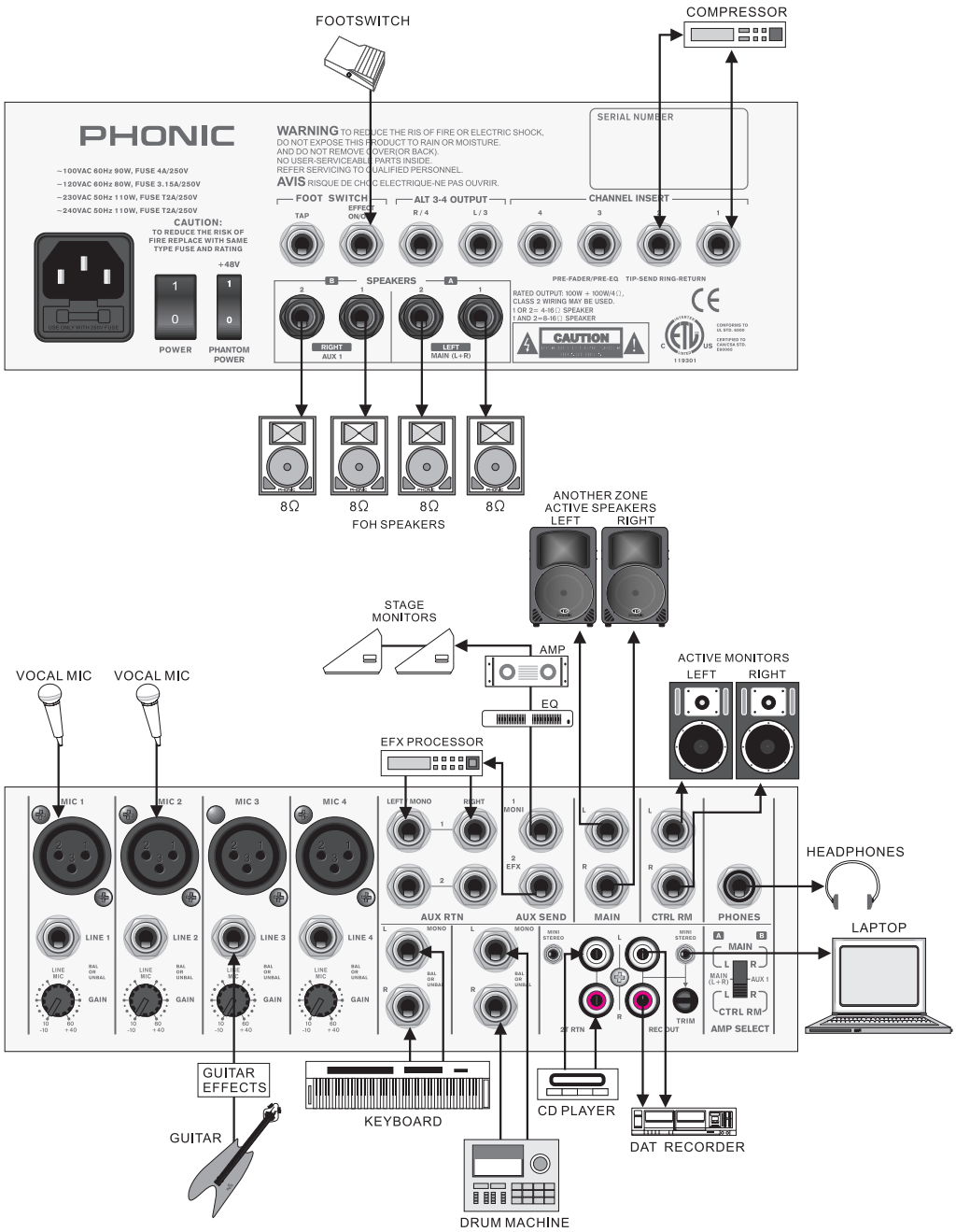
43. +48 Indicator
The +48V Indicator illuminates whenever the Phantom Power switch is activated.

44. Power Indicator
The Power Indicator will light up when the power of the mixer is on.



APPLICATION

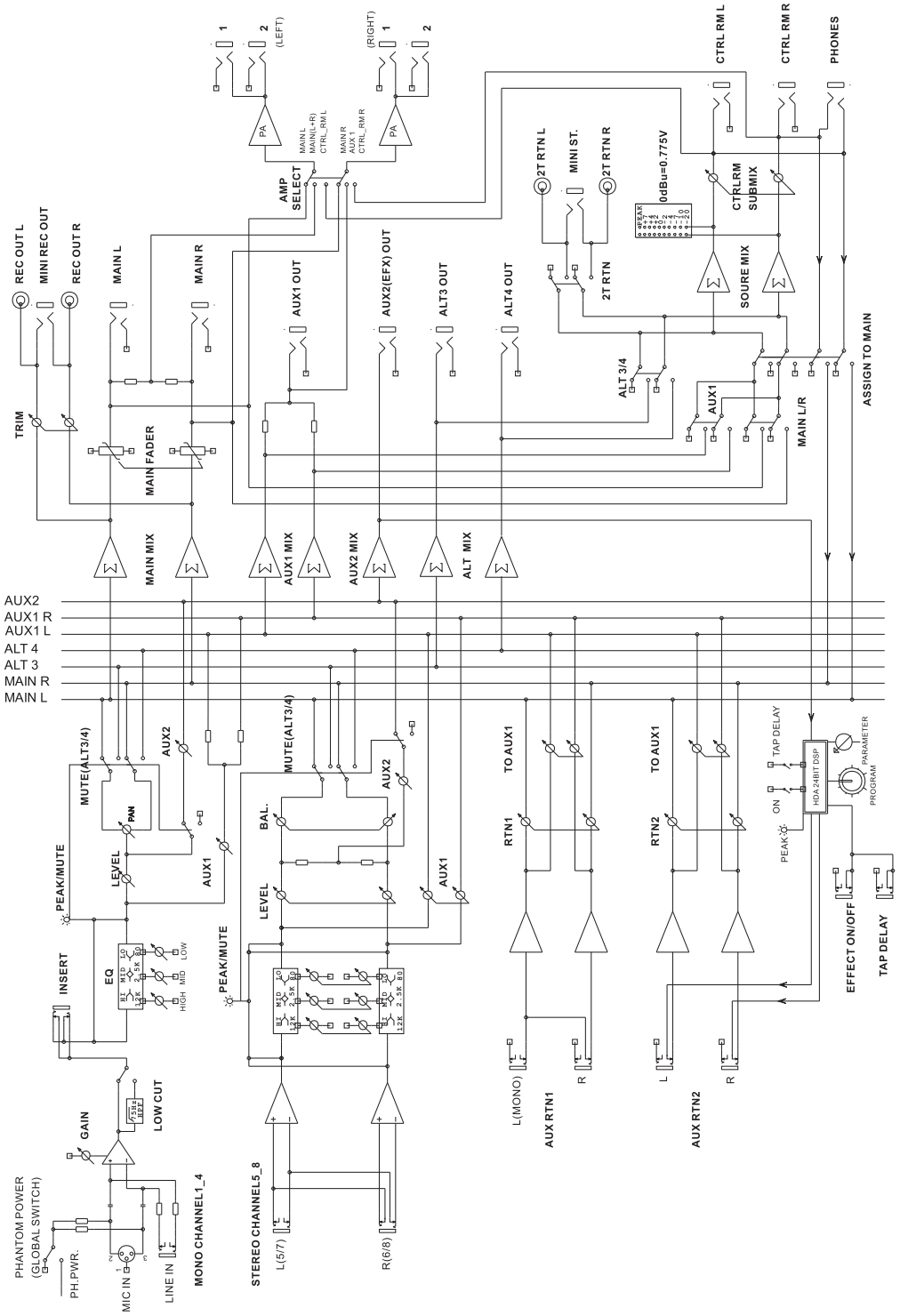
There are potentially hundreds of ways to connect instruments and devices to the MU 200XP Compact Powered Mixers. It is advisable that you explore the functions and find the best setup possible for your needs, which may depend on what instruments you wish to connect, as well as how many external devices you wish to connect and your required monitoring applications. Combining the use of different instruments with the mixer's special functions (such as digital effect processing) will ensure that your audio sounds exactly the way you want it.



DIGITAL EFFECT TABLE

No	Program Name	Program Description	Parameter Controllability	
			Parameter	Variable Range
1	HALL	This reverb simulates a large, expanse setting, such as a concert hall	Reverb Time	0.3 sec – 10.0 sec
2	ROOM	Creates acoustics similar to those of a small room	Reverb Time	0.3 sec – 3.2 sec
3	PLATE	Simulates a Plate Reverb device, creating hard sounding Reverberation	Reverb Time	0.3 sec – 10.0 sec
4	VOCAL 1	Ideal for Reverb of vocals	Reverb Time	0.3 sec – 10.0 sec
5	VOCAL 2	Ideal for Reverb of vocals	Reverb Time	0.3 sec – 10.0 sec
6	ECHO 1	Ideal for Echoing vocals	Delay Time	0 – 800 ms
7	ECHO 2	Ideal for Echoing vocals	Delay Time	0 – 800 ms
8	DELAY 1	Delays the audio signal	Delay Time	0 – 800 ms
9	DELAY 2	Delays the audio signal	Delay Time	0 – 800 ms
10	EARLY REF.	Modifies early reflections, creating a deeper sound or an echo-like effect	Room Size	0.1 – 10.0
11	G. REVERB	Produces effect by cutting the reverberation	Room Size	0.1 – 5.0
12	DOUBLER	Creates an effect simulating 2 vocalists	Modulation Frequency	0 – 50
13	SYMPHONIC	Adds richly layered depth to the sound	Depth	0 – 100%
14	FLANGE	Adds a sense of pitch to the sound	Modulation Frequency	0.05 – 4.00 Hz
15	DISTORTION	Used to distort the sound	Drive	0 – 100%
16	TAP DELAY	Allows you to select the delay time by clicking a button twice or by use of a footswitch. The amount of feedback is adjusted using the PARAMETER control.	Feedback Gain	0 – 99%
			Delay Time	100 ms (600bpm) – 2690 ms (22.3bpm)

BLOCK DIAGRAM

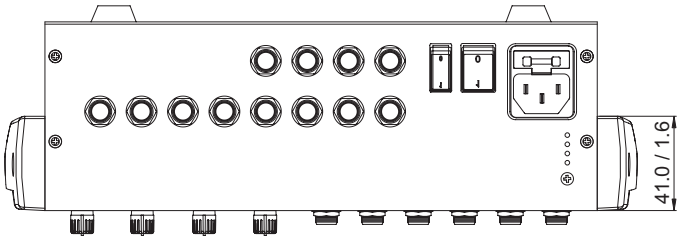


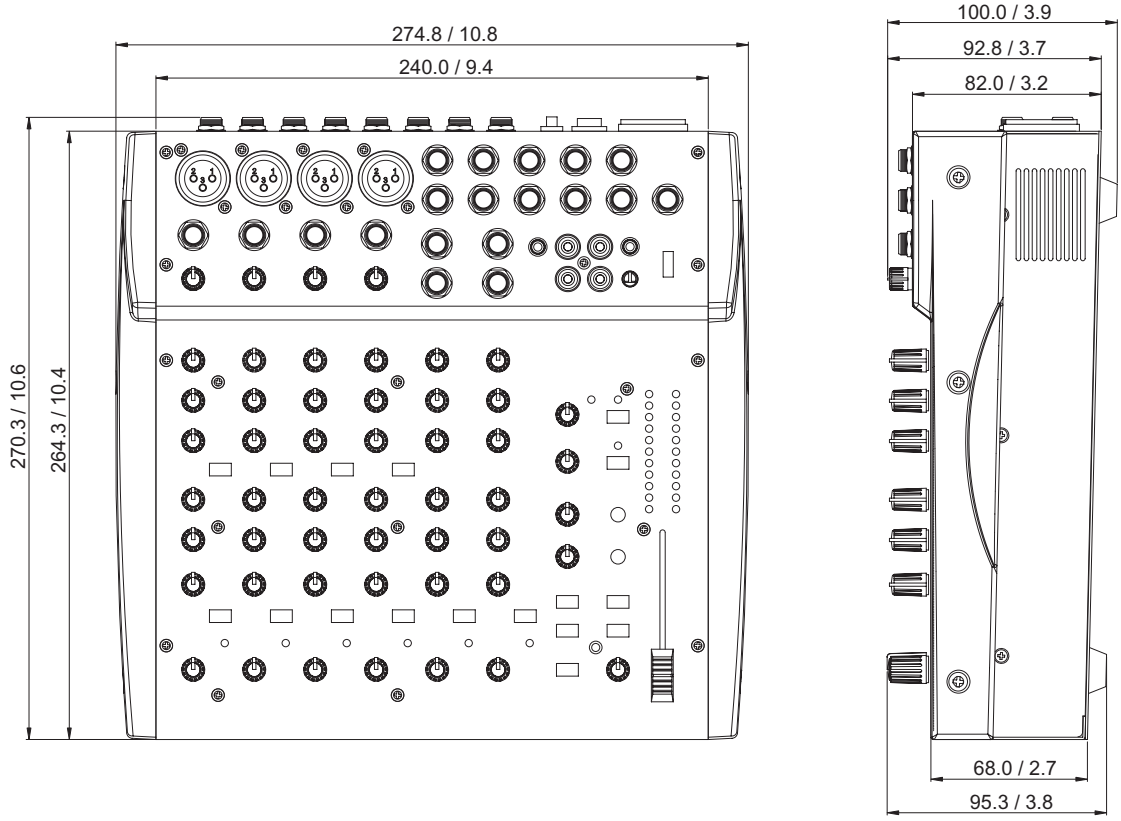
SPECIFICATIONS

	MU 200XP
POWER AMP, output power in Watts @THD<0.1%, 1KHz	
Number of Power Channels	2
Limiter	2
8 ohms per Channel	65
4 ohms per Channel	100
Inputs	
Total channels	6
Balanced Mono Mic/Line channel	4
Balanced Stereo Line Channel	2
Aux return	2 stereo
2T input	Mini stereo and stereo RCA
Outputs	
Main L/R stereo	2 x 1/4” TS, unbal.
ALT 3-4	2 x 1/4” TS, unbal.
Aux send	2 x 1/4” TS, unbal.
Rec out with trim control	Mini stereo and stereo RCA
CTRL RM L/R	2 x 1/4” TS
Phones	1
Channel Strips	**6**
Inserts	4
Aux send	2
Pan/Balance control	Yes
Volume Controls	Rotary
Master Section	
Stereo aux returns	2
Effects return to monitor	2
Control room/Phones Level Control	Yes
Fader	Main L/R, 60mm fader
Metering	
Number of channels	2
Segments	10
Phantom Power Supply	**+48VDC**
Switches	Master
Effect processor	**16 effects with one main parameter control, tap delay control, foot switch (effect on/off, tap)**
Frequency Response (Mic input to any output)	
20Hz ~ 60KHz	+0/-1 dB
20Hz ~ 100KHz	+0/-3 dB
Crosstalk (1KHz @ 0dBu, 20Hz to 20KHz bandwidth, channel in to main L/R outputs)	

Channel fader down, other channels at unity	<-90 dB
Noise (20Hz~20KHz; measured at main output, Channels 1-4 unit gain; EQ flat; all channels on main mix; channels 1/3 as far left as possible, channels 2/4 as far right as possible. Reference=+6dBu)	
Master @ unity, channel fader down	-86.5 dBu
Master @ unity, channel fader @ unity	-84 dBu
S/N ration, ref to +4	>90 dB
Microphone Preamp E.I.N. (150 ohms terminated, max gain)	**<-129.5 dBm**
THD	
Power output, 1KHz, 20Hz to 20KHz, @50 watts, 4 ohms	<0.1%
Any output, 1KHz @ +14dBu, 20Hz to 20KHz, channel inputs	<0.005%
CMRR (1 KHz @ -60dBu, Gain at maximum)	**80 dB**
Maximum Level	
Mic preamp input	+10 dBu
All other input	+22 dBu
Unbalanced Output	+22 dBu
Impedance	
Mic preamp input	2 K ohms
All other input (except insert)	10 K ohms
RCA 2T output	1.1 K ohms
Equalization	**3-band, +/-15 dB**
Low EQ	80 Hz
Mid EQ	2.5 KHz
Hi EQ	12 KHz
Low cut filter	75Hz (-18dB/oct)
Power Requirement(depends on region)	**100VAC, 120VAC, 220~240VAC, 50/60Hz**
Power consumption (average max.)	**100W**
Net Weight	3.2 kg (7 lbs)
Dimensions (WxHxD)	274.8x100x270.3 mm (10.8”x3.9”x10.6”)

DIMENSIONS





Measurements are shown in mm/inch

APPENDIX

REFERENCE BOOKS

Phonic recommends the following books for those interested in advanced audio engineering and sound system operation:

- Sound System Engineering by Don and Carolyn Davis, Focal Press, ISBN: 0-240-80305-1
- Sound Reinforcement Handbook by Gary D. Davis, Hal Leonard Publishing Corporation, ISBN: 0-88188-900-8
- Audio System Design and Installation by Philip Giddings, Focal Press, ISBN: 0-240-80286-1
- Practical Recording Techniques by Bruce and Jenny Bartlett, Focal Press, ISBN: 0-240-80306-X
- Modern Recording Techniques by Huber & Runstein, Focal Press, ISBN: 0-240-80308-6
- Sound Advice – The Musician's Guide to the Recording Studio by Wayne Wadham, Schirmer Books, ISBN: 0-02-872694-4
- Professional Microphone Techniques by David Mills Huber, Philip Williams. Hal Leonard Publishing Corporation, ISBN: 0-87288-685-9
- Anatomy of a Home Studio: How Everything Really Works, from Microphones to Midi by Scott Wilkinson, Steve Oppenheimer, Mark Isham. Mix Books, ISBN: 091837121X
- Live Sound Reinforcement: A Comprehensive Guide to P.A. and Music Reinforcement Systems and Technology by Scott Hunter Stark. Mix Books, ISBN: 0918371074
- Audiopro Home Recording Course Vol 1: A Comprehensive Multimedia Audio Recording Text by Bill Gibson. Mix Books, ISBN: 0918371104
- Audiopro Home Recording Course Vol. 2: A Comprehensive Multimedia Audio Recording Text by Bill Gibson. Mix Books, ISBN: 0918371201

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